

DOCKET NO: 209544US2

IN THE UNITED STATES PATENT & TRADEMARK OFFICE

IN RE APPLICATION OF

Youichi ISHIMURA, et al.

SERIAL NO: 09/881,675

FILED: JUNE 18, 2001

FOR: FIELD-EFFECT  
SEMICONDUCTOR DEVICE

: EXAMINER: TRAN, T.

: GROUP ART UNIT: 2811

REPLY BRIEF

COMMISSIONER FOR PATENTS  
ALEXANDRIA, VIRGINIA 22313

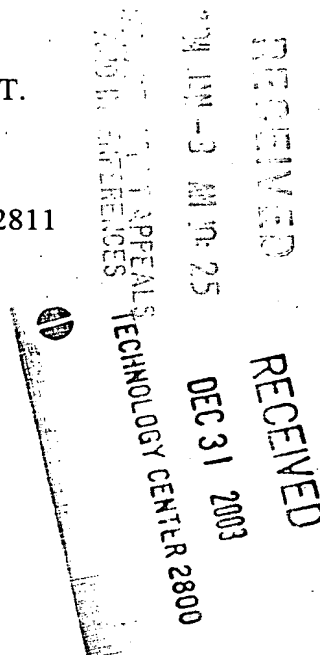
SIR:

The present Reply Brief is in response to the Examiner's Answer of October 21, 2003.

Appellants respectfully reiterate that the basis for the outstanding rejection set forth in the Examiner's Answer of October 22, 2003, is improper and must be REVERSED.

The outstanding rejection, discussed in detail in the Appeal Brief filed July 31, 2003, is primarily based upon the position that the teachings of Sakurai et al. (U.S. Pat. No. 5,962,877, hereafter Sakurai) are properly combinable with Sakurai et al. (JP 411284176 A, hereafter JP '176) and Okamoto et al. (U.S. Patent No. 4,903,117, hereafter Okamoto). However, Appellants respectfully submit that this is not the case. More specifically Appellants respectfully submit that the teaching or suggestion to make the claimed combination and the reasonable expectation of success is found only in the Appellants' disclosure, and not in the prior art references.

Sakurai relates to an inverter apparatus having an improved switching element. However, as admitted in the Final Office Action, at page 3, Sakurai does not disclose or



suggest the barrier metal layer recited in the pending claims. Sakurai also fails to disclose or suggest that including nitrogen in the barrier metal layer might provide any benefits, or that an emitter might be formed of aluminum. Additionally, as admitted in the Examiner's Answer at page 9, Sakurai is silent about the material being used for the emitter electrode 12.

JP '176 provides *pure* aluminum at an emitter electrode while a barrier layer is provided between the emitter electrode MOS gate. JP '176 indicates that a barrier layer is useful for an emitter composed of *pure* aluminum.

As the barrier metal layer of JP '176 is specifically described as useful with *pure* aluminum and Sakurai does not disclose or suggest any type of aluminum emitter, it is respectfully submitted that one of ordinary skill in the art would not have been motivated to combine the structure described in Sakurai with a barrier metal layer of the differing structure of JP '176.

Similarly, because Okamoto does not disclose or suggest any type of emitter, Okamoto necessarily does not disclose or suggest that a barrier layer containing nitrogen would be beneficial in a structure having an aluminum emitter. Therefore, the rationale for the combination cannot be found within the references' teachings.

Thus, the Final Office Action appears to rely upon the knowledge generally available to one of ordinary skill in the art as providing the motivation to combine the reference teachings. However, the level of skill in the art cannot be relied upon to provide the suggestion to combine references.<sup>1</sup>

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<sup>1</sup> *Al-Site Corp. v. VSI Int'l Inc.*, 174 F.3d 1308, 50 U.S.P.Q.2d 1161 (Fed. Cir. 1999).

In fact, it is only in light of the Appellants' written description in the specification and identification of the deficiencies of the prior art that the applied combination of Sakurai, JP '176 and Okamoto might become obvious. Thus, Appellants respectfully submit that one of ordinary skill in the art would not have combined the teachings in Sakurai, JP '176, and Okamoto, as suggested in the Office Action, and therefore the outstanding rejection must be REVERSED.

Respectfully submitted,

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